



## Clean Copy of Claims as Currently Pending

What is claimed is:

1. An immunological adjuvant composition useful for enhancing the immune response against antigens, comprising:  
a first adjuvant, wherein said first adjuvant comprises amorphous calcium phosphate formulated as a hardenable, injectable paste having a solids content of greater than or equal to 40 wt%.
2. A composition of claim 1, further comprising particles of said first adjuvant.
3. A composition of claim 2, wherein said particles have a diameter between 0.1 nm and 900 nm.
4. Cancelled.
5. A composition of claim 3, wherein 25-100% by weight of said composition consists of said particles having a diameter between 0.1 nm and 900 nm.
6. A composition of claim 1, wherein said first adjuvant is strongly resorbable.
7. Cancelled.
8. A composition of claim 1 further comprising a second adjuvant.

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9. A composition of claim 8, wherein said second adjuvant is selected from:  
muramyl dipeptide, aluminum hydroxide, aluminum phosphate, hydroxyapatite,  
Incomplete Freund's Adjuvant, and Complete Freund's Adjuvant.
10. A composition of claim 1 further comprising an antigen.
11. A composition of claim 1 further comprising a cytokine.
12. A composition of claim 11, wherein said cytokine is selected from: IL-2, IL-3,  
IL-4, IL-5, IL-6, IL-7, IL-9, IL-11, IL-13, G-CSF, IL-15, GM-CSF, OSM, LIF, IFN- $\gamma$ ,  
IFN- $\alpha$ , IFN- $\beta$ , B7.1, B7.2, TNF- $\alpha$ , TNF- $\beta$ , LT- $\beta$ , CD40 ligand, Fas ligand, CD27 ligand,  
CD30 ligand, 4-1BBL, IL-8, MCP-1, MIP- $\alpha$ , MIP- $\beta$ , RANTES, TGF- $\beta$ , IL-1 $\alpha$ , IL-1 $\beta$ ,  
IL-1 RA, IL-10, IL-12, and MIF.

13. A method for stimulating an immune response in a mammal, said method  
comprising:  
administering to the mammal a composition comprising amorphous calcium  
phosphate formulated as a hardenable, injectable paste having a solids content of greater  
than or equal to 40wt%.

14. A method for increasing immunogenicity of an antigen in a mammal, said  
method comprising:

co-administering both an antigen and a composition comprising amorphous calcium phosphate formulated as a hardenable, injectable paste having a solids content of greater than or equal to 40wt%.

15. An immunological adjuvant composition useful for enhancing the immune response against antigens, comprising:

a first adjuvant comprised of an injectable calcium phosphate paste capable of hardening at body temperature, wherein said paste is comprised of an amorphous calcium phosphate and a second calcium phosphate.

16. A composition of claim 15, further comprising particles of said first adjuvant.

17. A composition of claim 16, wherein said particles have a diameter between 0.1 nm and 900 nm.

18. A composition of claim 15, wherein 25-100% by weight of said composition consists of said particles having a diameter between 0.1 nm and 900 nm.

19. A composition of claim 15, wherein said first adjuvant is strongly resorbable.

20. Cancelled.

21. A composition of claim 15 further comprising a second adjuvant.

22. A composition of claim 21, wherein said second adjuvant is selected from:  
muramyl dipeptide, aluminum hydroxide, aluminum phosphate, hydroxyapatite,  
Incomplete Freund's Adjuvant, and Complete Freund's Adjuvant.
23. A composition of claim 15 further comprising an antigen.
24. A composition of claim 15 further comprising a cytokine.
25. A composition of claim 24, wherein said cytokine is selected from: IL-2, IL-3,  
IL-4, IL-5, IL-6, IL-7, IL-9, IL-11, IL-13, G-CSF, IL-15, GM-CSF, OSM, LIF, IFN- $\gamma$ ,  
IFN- $\alpha$ , IFN- $\beta$ , B7.1, B7.2, TNF- $\alpha$ , TNF- $\beta$ , LT- $\beta$ , CD40 ligand, Fas ligand, CD27 ligand,  
CD30 ligand, 4-1BBL, IL-8, MCP-1, MIP- $\alpha$ , MIP- $\beta$ , RANTES, TGF- $\beta$ , IL-1 $\alpha$ , IL-1 $\beta$ ,  
IL-1 RA, IL-10, IL-12, and MIF.
26. A method for stimulating an immune response in a mammal, said method  
comprising:  
administering to the mammal an injectable calcium phosphate paste comprised of  
an amorphous calcium phosphate and a second calcium phosphate, wherein said paste  
hardens at body temperature and stimulates an immune response in the host.

27. A method for increasing immunogenicity of an antigen in a mammal, said  
method comprising:

co-administering both the antigen and a composition comprising an injectable calcium phosphate paste capable of hardening at body temperature, wherein said paste is comprised of an amorphous calcium phosphate and a second calcium phosphate.

28. An immunological adjuvant composition useful for enhancing the immune response against antigens, comprising:

a first adjuvant, wherein said first adjuvant is a hardenable, injectable calcium phosphate paste comprised of an amorphous calcium phosphate and a second calcium phosphate; and

a second adjuvant, wherein the first and second adjuvants are selected so as to elicit an immune response from targeted cells or cell types.

29. A composition of claim 28, further comprising particles of said first adjuvant.

30. A composition of claim 28, wherein said first adjuvant is strongly resorbable.

31. A composition of claim 28, formulated as an injectable paste.

32. Cancelled.

33. A composition of claim 9, 22, or 28, wherein the second adjuvant is selected from the group consisting of a second calcium phosphate, muramyl dipeptide, aluminum hydroxide, aluminum phosphate, hydroxyapatite, Incomplete Freund's Adjuvant, and Complete Freund's Adjuvant.

34. A composition of claim 28 further comprising an antigen.
35. A composition of claim 28, wherein said adjuvanticity enhancing means is a cytokine.
36. A composition of claim 35, wherein said cytokine is selected from: IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-9, IL-11, IL-13, G-CSF, IL-15, GM-CSF, OSM, LIF, IFN- $\gamma$ , IFN- $\alpha$ , IFN- $\beta$ , B7.1, B7.2, TNF- $\alpha$ , TNF- $\beta$ , LT- $\beta$ , CD40 ligand, Fas ligand, CD27 ligand, CD30 ligand, 4-1BBL, IL-8, MCP-1, MIP- $\alpha$ , MIP- $\beta$ , RANTES, TGF- $\beta$ , IL-1 $\alpha$ , IL-1 $\beta$ , IL-1 RA, IL-10, IL-12, and MIF.
37. A method for stimulating an immune response in a mammal, said method comprising administering to the mammal a first adjuvant composition, comprising a hardenable, injectable amorphous calcium phosphate paste, and a second adjuvant, wherein the first and second adjuvants are selected so as to elicit an immune response from targeted cells or cell types.
38. The composition of claim 1, 15 or 28, further comprising an endogenous adjuvanticity enhancing means.
39. The composition of claim 15, wherein the calcium phosphate composition forms a poorly crystalline apatitic calcium phosphate.

40. The composition of claim 28, wherein the first and second adjuvants are selected so as to elicit an immune response from cells of the same type.

41. The composition of claim 28, wherein the first and second adjuvants are selected so as to elicit an immune response from cells of different types.

42. The method of claim 37, wherein said second adjuvant is selected from the group consisting of a second calcium phosphate, muramyl peptide, aluminum hydroxide, aluminum phosphate, hydroxyapatite, Incomplete Freund's Adjuvant, and Complete Freund's Adjuvant.

43. Cancelled.

44. Cancelled.